UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,375	07/01/2003	Ori Eisen	31718-706.201	3706

21971 7590 03/27/2009

WILSON SONSINI GOODRICH & ROSATI
650 PAGE MILL ROAD
PALO ALTO, CA 94304-1050

EXAMINER	
WEST, THOMAS C	
ART UNIT	PAPER NUMBER
3621	

MAIL DATE	DELIVERY MODE
03/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/612,375	EISEN, ORI	
	Examiner	Art Unit	
	THOMAS WEST	3621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1-9-09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. This action is in reply to the Arguments/Remarks filed on January 9, 2009.

2. Claims 1-23 are currently pending and have been examined.

Information Disclosure Statement

3. The Information Disclosure Statement filed on January 9, 2009 has been considered. An initialed copy of the Form 1449 is enclosed herewith.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 7, 8, 10, 11, 15, and 21 are rejected under U.S.C. 102(b) as being unpatentable over Kermani, U.S. Patent No. 6,895,514.

Claim 1:

Kermani, as shown, discloses the following limitations:

- providing instructions stored on a memory for assigning a score to a first of said keystrokes [[K1]]k_1 (see at least column 5, lines 37-41);

- providing instructions stored on a memory for assigning a score to succeeding keystrokes after [[K1]]k_1 based upon the time independent location of the keystroke in relation to another keystroke (see at least column 5, lines 62-67);
- providing instructions stored on a memory for summing at least three of the scores of the keystrokes in the string to obtain a string score (see at least column 4, lines 35-38);
- providing instructions stored on a memory for dividing the string score by the number of keystrokes used to determine the sum to obtain a normalized string score and (see at least column 4, lines 35-38);
- providing instructions stored on a memory for comparing the normalized string score to a predetermined value of normalized string scores to determine the likelihood that the keystroke entries are accurate (see at least column 2, lines 29-32).

Claim 2:

Kermani, as shown, discloses the following limitations:

- the keystroke [[K2]]k_2 is immediately after the keystroke [[K1]]k_1 and each succeeding keystroke is provided with a score based upon its location from a preceding keystroke (see at least column 5, lines 62-67).

Claim 3:

Kermani, as shown, discloses the following limitations:

- each keystroke's score after $_{k1}$ is based on its location in relation to the immediately preceding keystroke (see at least column 5, lines 62-67).

Claim 7:

Kermani, as shown, discloses the following limitations:

- further comprising making a preliminary determination of a risk of fraud or error based upon the comparative value of the normalized string score to said predetermined value of normalized string scores (see at least column 2, lines 16-22).

Claim 8:

Kermani, as shown, discloses the following limitations:

- further including calculating the normalized string scores for a plurality of strings, summing the normalized string scores to obtain a transactional score, and dividing the transactional score by the number of strings in the sum to obtain a normalized transactional score and determining accuracy based upon the value of the normalized transactional score in comparison to a predetermined value of normalized transactional scores (see at least column 4, lines 35-38).

Claim 10:

Kermani, as shown, discloses the following limitations:

- a processor (see at least column 4, lines 6-17);
- a memory coupled to said processor, said memory storing keystroke fraud instructions adapted to be executed by said processor to assign a score to a keystroke Km based upon the time independent location of the keystroke in relation to another keystroke Kn, t without regard to an amount of time associated with entering the keystrokes to sum the scores of the keystrokes in a string entered on the keyboard to obtain a string score and to divide the sum of the keystroke scores by the number of keystrokes in the string to obtain a normalized string score and a means for comparing said normalized string score to a predetermined score to determine the accuracy of said keystroke entries (see at least column 4, lines 6-17).

Claim 11:

Kermani, as shown, discloses the following limitations:

- keystroke fraud instructions are further adapted to be executed by said processor to store in said memory an indication of the absence of accuracy associated with said string based upon said normalized string score in comparison to a range of said predetermined scores (see at least column 8, lines 17-21).

Claim 15:

Kermani, as shown, discloses the following limitations:

- assigning a score to a keystroke k_m based upon the time independent location of the keystroke from another keystroke k_n without regard to an amount of time associated with entering the keystrokes (see at least column 5, lines 62-67);
- summing the scores of at least three of the keystrokes in the string to obtain a string score (see at least column 4, lines 35-38);
- dividing the sum of the keystroke scores by the number of keystrokes in the sum to obtain a normalized string score and comparing the same to a predetermined score to determine the probable accuracy of entered keystrokes (see at least column 4, lines 35-38 and column 2, lines 29-32).

Claim 21:

Kermani, as shown, discloses the following limitations:

- means for assigning a score to a keystroke k_m based upon the time independent location of the keystroke in relation to another keystroke k_n without regard to an amount of time associated with entering the keystrokes (see at least column 5, lines 62-67);
- means for summing the scores of the keystrokes in a string to obtain a string score (see at least column 4, lines 35-38);
- means for dividing the sum of the keystroke scores by the number of keystrokes in the sum to obtain a normalized string score and comparing the same to a predetermined value indicative of possible fraud or error (see at least column 4, lines 35-38 and column 2, lines 16-22).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 4-6, 9, 16, 17, 20, and 23 are rejected under U.S.C. 103(a) as being unpatentable over Kermani, U.S. Patent No. 6,895,514 in view of Brown, US Patent No. 5,557,686.

Claim 4:

Kermani discloses the limitations as shown above. Kermani does not disclose the following limitation, but Brown does:

- there is at least two intervening keystrokes between keystrokes [[K1]]k_1 and [[KN]]k_n (see at least column 5, lines 28-30 and column 5, lines 57-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani to include the keystroke method of Brown since this allows for measuring timing between keystrokes, which ultimately aids in identifying the user.

Claims 5, 6, 9, 16, 17:

Kermani, discloses a keystroke score (col. 5, lines 62-67). Kermani does not disclose a whole number, linear location, and enhanced value, but Brown does:

- the score of keystroke $k_2 \ldots k_n$ is an whole number plus the least number of adjacent key spaces between keystrokes $k_1 \ldots k_{n-1}$ (see at least column 5, lines 28-38 and column 5, lines 59-61, fig. 10).
- wherein the score of keystroke K2 is based upon the linear distance between keystrokes K1 and K2 (see at least column 5, lines 28-30 and column 5, lines 59-61).

- further including adding an enhanced value to the score of a keystroke if the keystroke is shifted (see at least column 7, lines 11-17).
- the score of keystroke k_m is a whole number plus the least number of adjacent keys spaces between keystrokes k_m and k_n (see at least column 5, lines 59-61).
- the score of keystroke k_m is based upon the linear distance between keystrokes k_m and k_n (see at least column 5, lines 28-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani to include the keystroke method of Brown since this allows for measuring timing between keystrokes, which ultimately aids in identifying the user.

Claim 20:

Kermani, discloses the limitations as shown above. Kermani does not disclose the following limitation, but Brown does:

- instructions are further adapted to be executed by said processor to perform the method including adding an enhanced value to the score of keystroke k_m,if keystroke k_m is shifted (see at least column 7, lines 11-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani to include the keystroke method of Brown since this allows for measuring keystroke timing, which ultimately aids in identifying the user.

Claim 23:

Kermani discloses the limitations as shown above. Kermani does not disclose the following limitation, but Brown does:

- means for determining if a keystroke is shifted, and adding an enhanced value to the score of the keystroke if the keystroke is shifted (see at least column 7, lines 11-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani to include the keystroke method of Brown since this allows for measuring keystroke timing, which ultimately aids in identifying the user.

8. Claims 12-14, 18, 19, and 22 are rejected under U.S.C. 103(a) as being unpatentable over Kermani, U.S. Patent No. 6,895,514 in view of Brown, US Patent No. 5,557,686 and in further view of Kroll, U.S. Patent No. 6,405,922.

Claim 12:

Kermani/Brown disclose the limitations as shown above. Kermani/Brown do not disclose the following limitation, but Kroll does:

- keystroke fraud instructions are further adapted to be executed by said processor to calculate the accuracy of an online transaction entered by keystroke entries on a keyboard comprising summing the normalized string scores for a plurality of strings to obtain a transactional score, and

dividing the sum of the normalized string scores by the number of strings in the sum to obtain a normalized transactional score, whereby the normalized transactional score is compared to a predetermined score to determine the accuracy of the online transaction (see at least column 4, lines 47-48)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani/Brown to include the keystroke method of Kroll since this further allows for measuring keystroke timing, which ultimately aids in identifying fraudulent users.

Claim 13:

Kermani/Brown disclose the limitations as shown above. Kermani/Brown do not disclose the following limitation, but Kroll does:

- keystroke fraud instructions are further adapted to be executed by said processor to store in said memory an indication of the absence of accuracy based upon said normalized transactional score (see at least column 4, lines 47-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani/Brown to include the keystroke method of Kroll since this further allows for measuring keystroke timing, which ultimately aids in identifying fraudulent users.

Claim 14:

Kermani/Brown disclose the limitations as shown above. Kermani/Brown do not disclose the following limitation, but Kroll does:

- keystroke fraud instructions are further adapted to be executed by said processor to add an enhanced value to the score of certain of said keystrokes if said keystrokes are shifted (see at least column 4, lines 47-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani/Brown to include the keystroke method of Kroll since this further allows for measuring keystroke timing, which ultimately aids in identifying fraudulent users.

Claim 18:

Kermani/Brown disclose the limitations as shown above. Kermani/Brown do not disclose the following limitation, but Kroll does:

- instructions are further adapted to be executed by said processor to perform the method including calculating the normalized string scores for a plurality of strings, summing the normalized string scores to obtain a transactional score, and dividing the sum of the normalized string scores by the number of strings in the sum to obtain a normalized transaction score and comparing the same to a predetermined score to determine the

probability of error or fraud in said keystroke entries in said online transaction (see at least column 4, lines 47-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani/Brown to include the keystroke method of Kroll since this further allows for measuring keystroke timing, which ultimately aids in identifying fraudulent users.

Claim 19:

Kermani/Brown disclose the limitations as shown above. Kermani/Brown do not disclose the following limitation, but Kroll does:

- instructions are further adapted to be executed by said processor to perform the method including determining a risk of fraud or error based upon the value of the normalized transactional score in comparison to one or more predetermined scores (see at least column 4, lines 47-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani/Brown to include the keystroke method of Kroll since this further allows for measuring keystroke timing, which ultimately aids in identifying fraudulent users.

Claim 22:

Kermani/Brown disclose the limitations as shown above. Kermani further discloses the following limitation:

- means for calculating the normalized string scores for a plurality of strings (see at least column 4, lines 35-38);

Kermani/Brown disclose the limitations as shown above. Kermani/Brown do not disclose the following limitation, but Kroll does:

- means for summing the normalized string scores to obtain a transactional score (see at least column 4, lines 47-48);
- means for dividing the sum of the normalized string scores by the number of strings in the sum to obtain a normalized transactional score and comparing the same to a predetermined score indicative of possible fraud or error (see at least column 4, lines 47-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kermani/Brown to include the keystroke method of Kroll since this further allows for measuring keystroke timing, which ultimately aids in identifying fraudulent users.

Response to Arguments

9. Applicant's arguments filed January 9, 2009 have been fully considered but they are not persuasive. Applicant's arguments will be addressed in sequential order as they were set forth in the "Remarks" section on the above date. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "spatial variations", "time

independent location", "independent of time", "without regard to an amount of time associated with entering the keystrokes", "a time independent analysis") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that Kermani discloses distance in an unconventional manner, without describing "unconventional". The Examiner respectfully points to the following quote from Kermani, "It can be seen from equation (2) that the distance d.sub.i for each character is calculated as the difference between the time lapse between the two adjacent characters as entered by the user minus the mean time lapse of model divided by the sum of the mean and the standard deviation for that character (column 5, lines 62-67)" Kermani therefore teaches that the relationship between keystroke distance (relative location) is based on the time lapse between keystrokes. The applicant's specification recites "A score can be assigned to a keystroke based upon its distance from another keystroke", which inherently involves a time factor due to the distance between the keys being used in assigning a score.

Conclusion

10. **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas West whose telephone number is 571-270-1236. The examiner can normally be reached on Tuesday and Wednesday 7:30am - 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Fischer can be reached on 571-272-6779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas West
Patent Examiner
Art Unit 3621
March 18, 2009

/ANDREW J. FISCHER/
Supervisory Patent Examiner, Art Unit 3621